



DESYCO: a Decision Support System to provide climate services for coastal stakeholders dealing with climate change impacts.

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At the international level climate services are recognized as innovative tools aimed at providing and distributing climate data and information according to the needs of end-users. Furthermore, needs-based climate services are extremely effective to manage climate risks and take advantage of the opportunities associated with climate change impacts. To date, climate services are mainly related to climate models that supply climate data (e.g. temperature, precipitations) at different spatial and time scales. However, there is a significant gap of tools aimed at providing information about risks and impacts induced by climate change and allowing non-expert stakeholders to use both climate-model and climate-impact data.

DESYCO is a GIS-Decision Support System aimed at the integrated assessment of multiple climate change impacts on vulnerable coastal systems (e.g. beaches, river deltas, estuaries and lagoons, wetlands, agricultural and urban areas). It is an open source software that manages different input data (e.g. raster or shapefiles) coming from climate models (e.g. global and regional climate projections) and high resolution impact models (e.g. hydrodynamic, hydrological and biogeochemical simulations) in order to provide hazard, exposure, susceptibility, risk and damage maps for the identification and prioritization of hot-spot areas and to provide a basis for the definition of coastal adaptation and management strategies.

Within the CLIM-RUN project (FP7) DESYCO is proposed as an helpful tool to bridge the gap between climate data and stakeholder needs and will be applied to the coastal area of the North Adriatic Sea (Italy) in order to provide climate services for local authorities involved in coastal zone management.

Accordingly, a first workshop was held in Venice (Italy) with coastal authorities, climate experts and climate change risk experts, in order to start an iterative exchange of information about the knowledge related to climate change, climate models and projections, impact and risk parameters and to know what are stakeholder needs related to climate change in a climate service perspective. The preliminary results gained from the workshop showed that DESYCO is an helpful tool for the impact and risk assessment related to climate change that could be improved in order to fulfill stakeholder needs.